DOCUMENT RESUME

ED 324 685 CS 212 539

AUTHOR Norris, Dolores J.
TITLE Improve Quantity and Quality oi Student Writing through the Implementation of Telecommunications and Process Writing Activities between Fifth and Sixth Grade Students.
PUB DATE Aug 90
NOTE 50p.; Educational Specialist Practicum, Nova University.
PUB TYPE Dissertations/Theses - Practicum Papers (043)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Audience Awareness; *Computer Networks; *Electronic Mail; Grade 5; Grade 6; Intermediate Grades; Junior High Schools; *Word Processing; *Writing Improvement; *Writing Instruction; Writing Laboratories; *Writing Processes
IDENTIFIERS *Process Approach (Writing)

ABSTRACT

A writing program was developed and implemented, using available technology, to increase the quality and the quantity of written communication of three heterogeneously grouped classes of fifth graders. The students learned to use the word processor, Magic Slate II, for process writing assignments. A modem, Supra Modem 2400, and Proterm software were used to initiate electronic dialogs between the target group of fifth-grade students at an elementary school and the sixth-grade students at a junior high school 25 miles away. The students utilized the international news programs of the Cable News Network as a stimulus for their interaction. Results indicated increased levels of achievement in students' communication and writing skills. Findings suggest that the utilization of technology and an active audience had a positive impact on the writing process. (Six appendixes, containing a teacher survey, student survey, writing scores, concept units, student final survey, and student survey results are attached.) (SR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED324685

IMPROVE QUANTITY AND QUALITY OF STUDENT WRITING THROUGH THE IMPLEMENTATION OF TELECOMMUNICATIONS AND PROCESS WRITING ACTIVITIES BETWEEN FIFTH AND SIXTH GRADE STUDENTS

by

DOLORES J. NORRIS

A Practicum Report

Submitted to the Faculty of the Center for the Advancement of Education of Nova University in partial fulfillment of the requirements for the degree of Educational Specialist.

The abstract of this report may be placed in a National Database System for reference.

August 1990

CS212539

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Dolores J. Norris

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. When it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of other workers in the field and in the hope that my own work, presented here, will earn similar respect.

Signed Edward J. Davies

Abstract

Improve Quantity and Quality of Student Writing through the Implementation of Telecommunications and Process Writing Activities Between Fifth and Sixth Grade Students.
Norris, Dolores J., 1990: Practicum Report, Nova University, The Center for the Advancement of Education.
Descriptors: Word Processing/News Writing/Creative Writing/Computer Oriented Programs/Student Writing Models/Prewriting/Student Evaluation/Student Programs/News Writing/Electronic Publishing/Writing Skills/Telecommunications/Technical Writing/Educational Technology/Writing Laboratories/

The author developed and implemented a writing program, using available technology, which would increase the quality and quantity of the written communication of the target group consisting of three heterogeneously grouped classes of fifth grade students. The students learned to use the word processor, Magic Slate II, for process writing assignments. A modem, Supra Modem 2400, and Proterm software was used to initiate electronic dialogue between the target group of fifth grade students at an elementary school and the sixth grade students at a junior high school 25 miles away. The students utilized the international news programs of the Cable News Network as a stimulus for their interaction. The results indicated increased levels of achievement in the student's communication and writing skills. It was concluded that the utilization of technology and an active audience had a positive impact on the writing process.

SEP 25 1990

Appendix J

Nova University
Center For The Advancement of Education
3301 College Avenue
Fort Lauderdale, FL 33314

Observer Verification Form

Verification of Practicum Activity

Dear Observer:

Practicum students in Nova's M.S. and Ed.S. programs are asked to provide external verification that the project activities reported in their final practicum documents took place as described. You have been designated an observer to fulfill this confirmation function by the student named below. On this sheet, then, please write a note attesting to your knowledge of the project activity described in the final practicum report to which this will be attached. (Note that you are not asked to evaluate or make judgments about the quality of the project.)

Practicum Title Improve Quantity and Quality of Student Writing Through the Implementation of Telecommunication and Process Writing Activities between 5th and 6th Grade Students

Student's Name Dolores J. Norris

Program Site Vineland Elementary School Date June 13, 1990

Observer's Name Carol Brady Carol Brady
(please print------/--and sign)

Observer's position Asst. Admin. Phone # 813-697-6600

Observer's comment on impact of the project (handwritten):

The excellent telecommunication and process writing activities were implemented with great success and enthusiasm. All involved learned a great deal.

Table of Contents

PAGE

Title Page. 1

Authorship Statement. ii

Abstract. iii

Observer's Verification iv

Chapters

1. Purpose 1

2. Research and Solution Strategy . . . 7

3. Method 14

4. Results. 19

5. Recommendations. 22

Reference List 24

Appendices 26

Appendix A: Teacher Survey 28

Appendix B: Student Survey 30

Appendix C: Writing Scores 33

Appendix D: Concept Units 37

Appendix E: Student Final Survey 41

Appendix F: Student Survey Results . . . 43

CHAPTER I

Purpose

Background

The school setting for this practicum was a three year old elementary school including grades prekindergarten through five. The building was built to educate 750 students but at the time of this practicum the enrollment was comprised of 1027 students. Ten classrooms were housed in portable buildings. Most of the students were from middle to high middle income families. Only two percent of the total enrollment consisted of minority groups.

One of the outstanding things about this school was the support and involvement of the parents and community. Although this was a new school in it's third year of operation the Parent Teacher Organization (PTO) was very active in the support of the school. During the first eight months of the 1989-1990 school year an average of 571 hours of volunteer time was contributed to the school each month. The volunteers were used in the office and in

the classroom tutoring students and assisting teachers as needed.

The writer of this practicum taught grades two through five in the computer lab. The computer lab consisted of 24 Apple IIE computers and eight ImageWriter II color printers. Each classroom in the school was equipped with an Apple IIE computer with two disk drives, a color monitor and an ImageWriter II color printer. The writer also supervised the teachers in the kindergarten and first grades with the selection of software to use in the lab with their students in the times the lab did not have regularly scheduled classes. Computer literacy classes for the teachers were also the writer's responsibility. These classes included computer literacy, word processing, data base use, and the reviewing of programs the teachers could use with their students in the classroom. Teachers recieved sixty inservice points for taking these classes.

The county setting for this practicum was a growing community. The 1988-1989 school year closed with 8,737 students enrolled in the county schools. Eight months into the 1989-1990 school year we found the school enrollment had climbed to 9,954 students.

This was a growth of 1,217 students in the county school student population.

Problem Statement

The writer of this practicum's county had targeted writing as one of the areas in the curriculum to emphasize. Writing was being used to strengthen students skills in the language arts curriculum. In the primary grades the whole language approach to writing was being stressed. The county had encouraged the writing of books by the students. Those students who created a book were invited to the Young Authors Conference to meet a real published author. Creative writing was stressed in all grade levels in the county.

A survey (Appendix A:28) was conducted among the fifth grade teachers. According to the survey results, it was found that most fifth grade teachers felt their students needed to improve their writing skills. They felt the most important objective in teaching the student to write was to create the desire to write independently. One hundred percent of the teachers felt that writing was important and that the computer could be used as a motivational tool to

encourage their students to produce writings of better quality and quantity.

A survey (Appendix B:30) given to the target group of 77 fifth grade students revealed that 38 percent had used a computer to complete a writing assignment. Forty four percent of the students enjoyed writing and 30 percent perceived they were good writers. Sixty eight percent of those surveyed sensed that writing was important. The survey also showed that 22 percent felt they could use writing to communicate their thoughts to others. Most students should enjoy writing, perceive they are good writers, feel that writing is important, and use writing to communicate their thoughts to others.

Outcome Objectives

There were six fifth grade classrooms in the writer's school. The target group, consisted of three of the fifth grade classes which participated in process writing activities using the Apple IIE computers. The writing assignments were based on the videos of the Cable News Network (CNN) Newsroom productions. The students used telecommunications to interact with sixth grade students at a neighboring junior high school.

The remaining three fifth grade classrooms also used the process of writing on the Apple IIE computers and the writing assignments based on the CNN Newsroom productions. They published their documents to share with their classmates and parents but did not use telecommunications.

The author of this practicum developed a writing program using technology to motivate writing. Over a period of 10 weeks, the target group of fifth grade students would show a 20 percent increase in the quantity and quality of thoughts expressed in each writing assignment as evidenced by the pretest and posttest writing assignments. The students also realized the importance of writing and enjoyed the writing experience as evidenced by responses on the student survey. A 10 percent increase was expected.

The paragraph written on the Student Survey (Appendix B:30) was used as a pretest activity. It was scored by noting the number of thoughts included in the paragraph. The last writing assignment of this study was used as the post test. An evaluation of the pretest and posttest paragraphs was used as a criteria to validate skill improvement. A comparison was

made between the quantity of thoughts in the paragraphs of the target group.

CHAPTER II

Research and Solution Strategy

According to Sharples (1983) there were three major elements which were essential for a child to develope skills in creative writing. Sharples stated that first, the child must understand the theory of the writing process; second, the tools necessary for the child to create and compose must be available. The third element necessary was the written material such as games, exercises, and project work which provides teaching. Writing was broken down into a three stage process, including concept formation, text production and text revision.

D'Aoust (1986) discussed the teaching of writing as a process and described the complex system of transforming thoughts into written communication. The stage-process model was used to make up the writing process. It was made up of the steps of prewriting, writing, sharing/responding, revising, editing and evaluating.

Prewriting activities were used to generate ideas about a specified topic. Brainstorming, debating, clustering, discussion, and graphics were a few of the activities used to seek verbalization during the prewriting time.

When the prewriting activities were concluded, students composed their text by putting words and ideas on the screen. Students needed to be aware that this was not their final copy as they were composing.

The next stage in the writing process was called sharing. The writing could be shared with the teacher or peer group. The writer could make notes of his own suggestions for revising or those suggestions made as his audience responded to the writing.

Revising was a reviewing of the writing and making any changes the writer felt necessary in view of the feedback received from his audience. Revising does not only occur at this time but through out the composition as the author feels necessary.

The next step reviewed was editing. During this process the student corrected punctuation, spelling and grammar errors. By utilizing the word processor, students usually found the editing process easy and rewarding.

Evaluation was the final feedback to the student. The writing was printed or published and was directed to the target audience.

Meeker (1984) stated that using a word processor can eliminate the anxieties of seeing a blank page. The writer was always in the middle of the action. The student could easily write because the words could be easily changed or completely erased. Thoughts can be inserted whenever the writer desires during writing to explore ideas. This gave the writer a feeling of mastery over the writing. The writer was in control of the process.

In the study completed by Kurth and Stromberg (1984), they found that using the computer encouraged easier and more discussion, group editing, and revision. The screen made it easier to access the print and also seemed to cause the students to focus attention on the writing task.

In the Florida - England Connection project, sponsored by the Panhandle Center of Excellence in Mathematics, Science, Computers, and Technology, which linked students in Florida with those in England, Potter (1990) felt telecommunications was very beneficial to writing. The experience was highly

motivating in developing the revision and editing skills of students. Telecommunication gave purpose to this phase of the writing process.

To aid in the effectiveness of communication, the student must be made aware of the intended audience at the beginning of each writing attempt. Knowing an active audience would be reading and reacting to the writing helped to motivate the student and improve writing skills. Although, it was important for the teacher to read and grade the document, research showed that the feedback given the student by an active audience was even more important (Haley-James, 1981).

Frank (1986) contended that word processing was a potentially powerful tool in the quest to improve the student's writing. The word processor can help students improve writings in both the cognitive and affective dimensions of writing and revision. It makes the writing task uncomplicated, faster and more efficient.

Properly put in the hands of students, computers can make them feel powerful and effective. The computer can be an extension of the students minds with the student controlling the computer Worly (1985).

According to Solomon (1989), Holvig, a computer writing teacher in Clarkstown South High School in Rockland County, New York found there was a difference in the students' writing when they write for an audience. In this project Holvig stated, when writing for an audience, rather than for the teacher only, caused students attitudes and achievements to be positive, perhaps because someone was listening across the wires. When writing to an active audience the students felt their writing had improved and they had gotten ideas from others and learned about different cultures.

Teachers have incorporated the active audience concept in classrooms by arranging for the students to exchange letters with pen pals. This has enabled the student to practice communication skills and learn about other people and cultures. Clark (1989) explains the use of written letters alone can meet some educational objectives; but when merged with technology such as the video, audio, and computer materials, writing projects can be extremely effective. The results of a study by Clark (1989) show that class interest ran the highest when the

students were actively involved in communication with other students through the use of telecommunications.

Holte (1989) stated that one of the most exciting tools in science was the on line network. Telecommunications allowed the student to move outside the classroom walls and communicate with people and resources around the world.

The use of a modem and communications software helped the teacher to open a wider audience to their students. Students were able to communicate with others, outside their classrooms through use of the telephone lines. This mode of communication provided an active audience for the student to share their writings.

Since the research of Haley-James (1981) indicated that the teaching of process writing using the word processor was more effective when the student had an active audience the writer decided to develop a program using process writing with the word processor, video and telecommunications. By integrating technology into the process writing assignments the student had an active audience for their compositions. (Holvig, 1989) This added enthusiasm and interest on the part of the students and motivated

them to surpass the average number of ideas communicated in previous writing assignments. This introduction of the 15 minute segment of world news from CNN Newsroom provided the stimulus for the student's written assignments. The students used the word processing program Magic Slate II to discuss, debate and editorialize on various news programs produced by CNN Newsroom.

The fifth graders communicated with the sixth graders at a junior high school 25 miles away. The sixth graders viewed the same 15 minute segment of the CNN Newsroom. The teachers of both the fifth grade students and the sixth grade students had access via the modem to the daily lesson plans produced by CNN Newsroom. These lesson plans were used as the basis for the communications between the fifth graders and the sixth graders. One period each day the students, at the writer of this practicum's school, downloaded their documents to the junior high school. The junior high school students responded and madeup the active listening audience needed by the fifth grade students.

CHAPTER III

Method

Methodology

Fifth grade students who attended the writer's school were used as the target group to implement this practicum. There were six heterogeneously grouped fifth grade classes taught in the computer lab each week. The writer chose three of the fifth grade classes as the target group using telecommunications and the remaining three classes did not use telecommunications.

During weeks one and two both groups of students were taught to use the word processing program, Magic Slate II, on the Apple IIE computers in the lab. Each group did writing assignments to become familiar with using the process writing approach when producing written assignments. Charts were put up in the room to remind the students of the six process writing steps: prewriting, writing, sharing/responding, revising, editing, and evaluating.

The target group was introduced to the use of

telecommunication during the third week, Students learned to use the Supra Modem and Pro Term communications software. The modem and communications software were used in the chat mode as fifth graders interacted with sixth grade students from a junior high school 25 miles away.

During weeks four through ten, the fifth and sixth grade students viewed the international news daily from CNN Newsroom. The CNN Newsroom program is a 15 minute segment of international news edited for schools and shown without commercials. The program is an educational service of the Turner Broadcasting System. The writer of this practicum recorded the video tapes to show to the class at a convenient time. Lesson plans are also available by accessing the Newsroom Teacher's Guide with a computer and modem. The Guide included a summary of the daily news program and suggested class activities. Each morning the junior high school's computer specialist downloaded the Newsroom Teacher's Guide from GTE Education Services in Irving, Texas. The writer used the Proterm Modem to download the Newsroom Teacher's Guide from the junior high school. One copy was printed and

sent with the news video to the fifth grade teachers for the students to view before coming to the lab that day.

The target fifth graders communicated with the sixth graders using one of the News Desk headlines or weekly special report topics from the Business Desk, Future Desk, Science Desk, or the Editor's Desk portion of the broadcast. These fifth grade students wrote reports, editorials, and their reactions to the news broadcasts. Each week they wrote using one of the News Desk headlines or one of the weekly special report topics as the stimulus for their writings.

Resources

Apple IIE computers, in the computer lab, were used for this project. The computer lab was comprised of 24 computers and eight ImageWriter II color printers. A county grant was written by the writer and the junior high school computer specialist. Money from this grant was used to purchase the Supra Modem 2400, the communications software, Proterm, and video tapes which were used to tape the CNN Newsroom broadcasts. Also the grant paid for access time on

GTE Educational Services.

Fifth grade teachers at the writer's school and Sixth grade teachers and the computer specialist at the junior high school were actively involved in the project. Contacts were made daily, via modem, to upload and download information. Computer experts were contacted from local computer companies for advice about purchasing suitable equipment and software. Schools were contacted concerning hardware and software they used in communication activities.

Monitoring

At the end of each three weeks segment of this project, the student's writings and the complete project was evaluated to determine if there were any problems or any changes needed. This evaluation included the junior high school computer specialist and the fifth and sixth grade teachers involved in this project. Changes necessary to enhance the success of the project were discussed. The only change made was in the dissemination of the daily CNN lesson plans. One set of lesson plans was routed to the teachers with the video taped news segment. The teachers felt it would be beneficial to have access to

the lesson plan before viewing the tape and be able to keep a copy of the lesson plans in their personal file. The change was made and one copy of the lesson plan was sent to each teacher every morning before school as soon as it was downloaded from the junior high school.

Evaluation

A folder was kept by each student and their writings were printed using the Apple ImageWriter II printer. The replies from the sixth grade students, received via the modem, were also printed for these students and stapled with their original writings. The folder also contained the prewriting sample which the student completed at the beginning of this project.

As the program progressed, the writer checked the folders biweekly to evaluate progress, make suggestions, and motivate the students. The students' communication and the sixth graders replies were also read and shared during their time with their fifth grade teacher. The teachers and the students were excited as the news was explored, new ideas were communicated and writing skills improved.

CHAPTER IV

Results

At the end of 10 weeks, the writer compared the students pretest paragraphs and posttest paragraphs. The quantity and quality of each paragraph was scored using the holistic scoring technique of evaluation. Holistic scoring is evaluating the paper as a whole. The writer used a scale of one to six points. The criteria encouraged in the holistic process included:

1. Clear introduction.
2. Information presented clearly.
3. Information well organized.
4. Details and/or description used.
5. Facts presented accurately.
6. Concluding statement.

The pretest showed an average holistic score (Appendix C:33) of two in each the three classes of target students. The posttest, the last writing assignment of each student, showed an average holistic score of five in two of the three classes of target students and an average holistic score of four in the

third class. The third class had missed their computer lab writing program four times during the project because of scheduled assemblies and the class musical production practices. This was unfortunate but was beyond the control of the writer of this practicum.

The criteria used to encourage more writing, in addition to the above list was the counting of complete concept units. (Appendix D:37) A concept unit is defined as a segment of significant expression that contains a subject and verb and the concept can exist alone. The concept units were counted in the prewriting paragraph and compared to the number of complete concept units counted in the final writing assignment. The prewriting assignment showed an average of four concept units in each selection while the individual number varied between one and eight within all three classes. The exception was one student in class two whose writing contained eleven concept units. The post writing assignment showed an average of ten concept units in class one, 14 concept units in class two and an average of seven concept units in class three. This reflects an average increase of 211 percent for the three classes. These

scores showed the effectiveness of technology and an active audience on the writing process since the pretest was completed before the students learned the process writing steps. The two factors that influenced this increase was writing using the computer in addition to having an active audience and anticipating a response.

An increase of 10 percent in the scores of the target group was expected on the Student Final Survey (Appendix E:41) to show the effect of an active audience on the student's writing. The results shown in this objective were greater than expected. (Appendix F:43) The final survey given revealed that 99 percent had used a computer to complete a writing assignment. Compared to 44 percent of the students who enjoyed writing using a computer, the final survey showed 62 percent of the students now enjoyed writing using a computer. Fifty eight percent perceived they were good writers which is an increase of 28 percent. The survey also revealed that 54 percent felt they could use writing to communicate their thoughts to others. This is an increase of 32 percent. The final survey results showed the project had increased the student's enjoyment and self confidence in writing.

CHAPTER V

Recommendations

The data collected during the process of this practicum will be shared at the county level with other teachers and administrators during county wide meetings. It will be shared with teachers during inservice classes taught by the writer in the computer lab. They will be invited to experience communication with others through the use of telecommunications.

During the summer school program the county provides a process writing lab for students use at each school site. The results of this study will be shared with those instructors preparing to teach this summer in the process writing labs. The goal of adding the possibility of an active audience for summer school students by using telecommunications to communicate between the different school sites would be exciting.

The writer of this proposal will provide teachers with information about this program and strategies to implement it in their classroom setting. This could

be a year long project with teachers scheduling the use of the telecommunications equipment to meet their curriculum needs. The project will also be shared with the Teacher Education Center for possible inclusion in future inservice modules.

Reference List

Clark, Chris. "Distance Education in United States Schools," The Computing Teacher, March 1989, pp.7-9.

D'Aoust, Cathy. "Teaching Writing as a Process," Practical Ideas for Teaching Writing as a Process. Sacramento, CA: California State Department of Education, 1986

Frank, Russell. "Yes, There is a Better Way: Revising on a Word Processor," Practical Ideas for Teaching Writing as a Process. Sacramento, CA: California State Department of Education, 1986

Haley-James, Shirley. "Perspectives on Writing in Grades 1-8." National Council of Teachers of English, 1981.

Holte, Jeff. "Technology and the Science Class: Going Beyond the Walls of the Disk Drive," Electronic Learning, Nov. 1989, pp. 38-42.

Kurst Ruth J.; Stromberg, Linda J. "Using Word Processing in Composition Instruction," Dec. 1984 ERIC ED 251 850

Meeker, Michael W. "Word Processing and Writing Behavior." Minnesota Council of Teachers of English. Oct. 1984.

Potter, Rosemary L. "Telecommunications Motivates Writers!," Florida Educational Computing Quarterly, Winter 1990, p.45.

Sharples, Mike. "The Use of Computers to Aid the Teaching of Creative Writing," AEDS Journal, Winter 1983, pp79-91.

Solomon, Gwen. "A Writing Class Taps Into a World of Knowledge," Electronic Learning, March 1989, pp.16-17.

Wendt, John. "Schools Key on Computer Literacy." Sarasota Herald-Tribune, April 9, 1990, pp.1B, col.2-4.

Worsley, Dale. "Sourdough Writing Teaching Computer Fiction Writing," Teachers and Writers, Jan.-Feb. 1985 pp.1-6

APPENDICIES

APPENDIX A

Teacher Survey

Appendix A

Teacher Survey

1. Have you ever used a computer for a writing assignment?
   YES NO

2. Do you like doing writing assignments on the computer?
   YES NO

3. Would you rather do your writing assignment using pencil and paper?
   YES NO

4. Writing is important.
   YES NO

5. I enjoy writing.
   YES NO

6. What is the most important objective in teaching the student to write?
   A. Sentence structure
   B. Create the desire to write
   C. Neat papers

7. Do you feel students write more when stimulated?
   YES NO

8. Do you feel the computer would encourage the student to produce writings of better quality and quantity?
   YES NO

9. Fifth grade students in this class need to improve their writing skills.
   YES NO

10. Students writings will improve in quality and quantity when writing for an active audience.(Ex. Pen Pals or Telecommunications)
    YES NO

APPENDIX B

Student Survey

Appendix B

Student Survey

Circle one: Boy-Girl
Teacher:_____

1. Have you ever used a computer for a writing assignment?
   YES NO

2. Do you like doing writing assignments on the computer?
   YES NO

3. Would you rather do your writing assignment using pencil and paper?
   YES NO

4. Writing is important.
   YES NO

5. I am a good writer.
   YES NO

6. Does using the computer for a writing assignment make you nervous?
   YES NO

7. It is easier to write using a computer than with a pencil.
   YES NO

8. Writing helps me tell other people what I think.
   YES NO

NAME_____

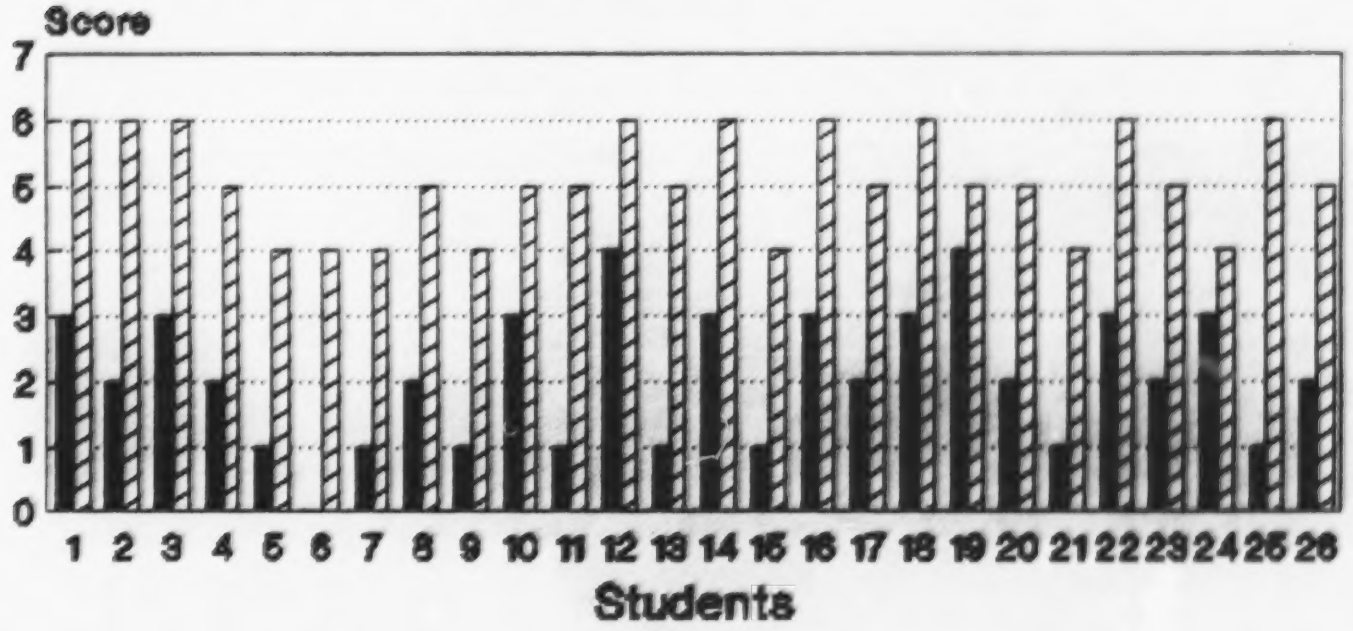
9. Choose one of these topics and write a paragraph. Describe the activity and tell why you like it.

A. My favorite TV show is...
B. My favorite sport is...
C. My favorite book is...
D. My favorite (you may choose your own subject).

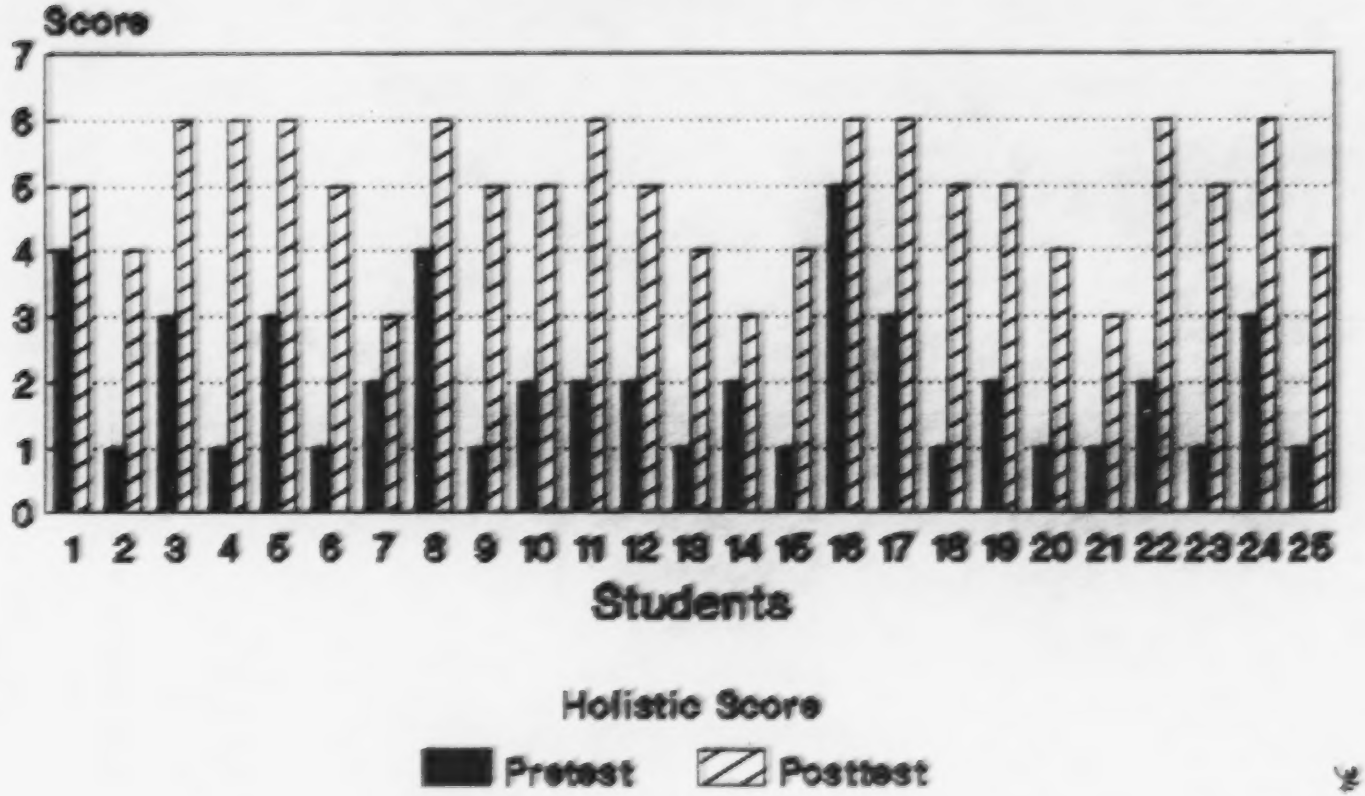
APPENDIX C

Writing Scores

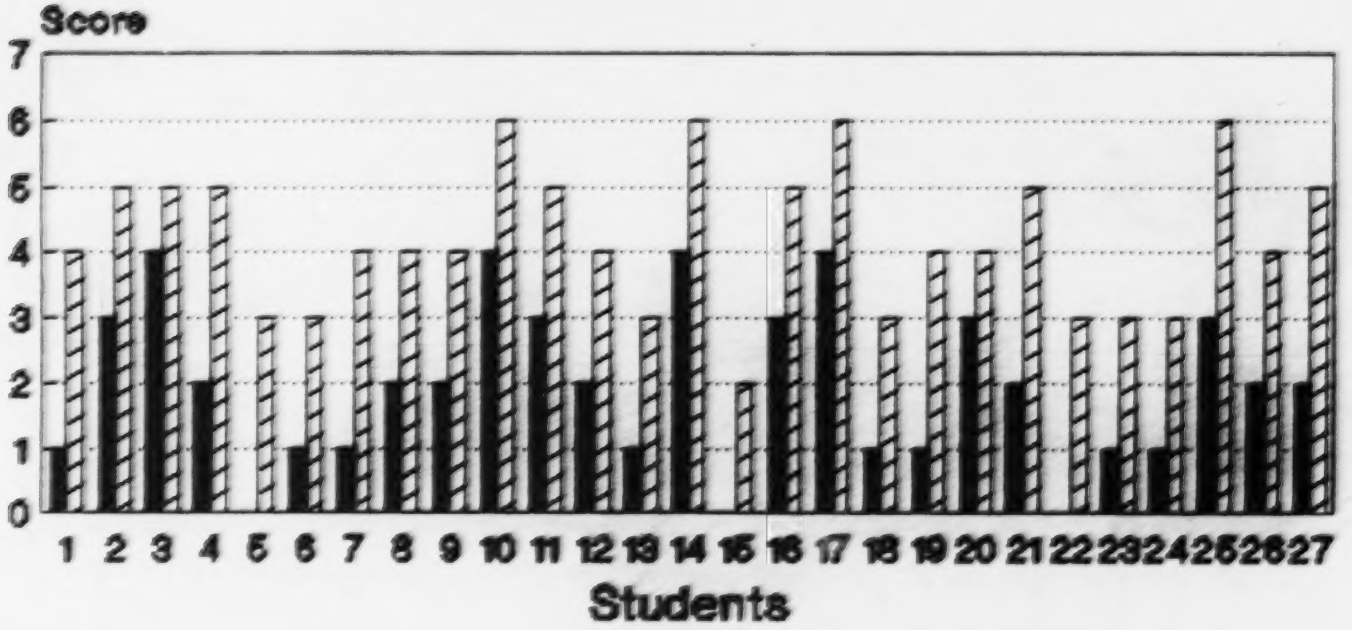
WRITING SCORES
Class 1



WRITING SCORES
Class 2



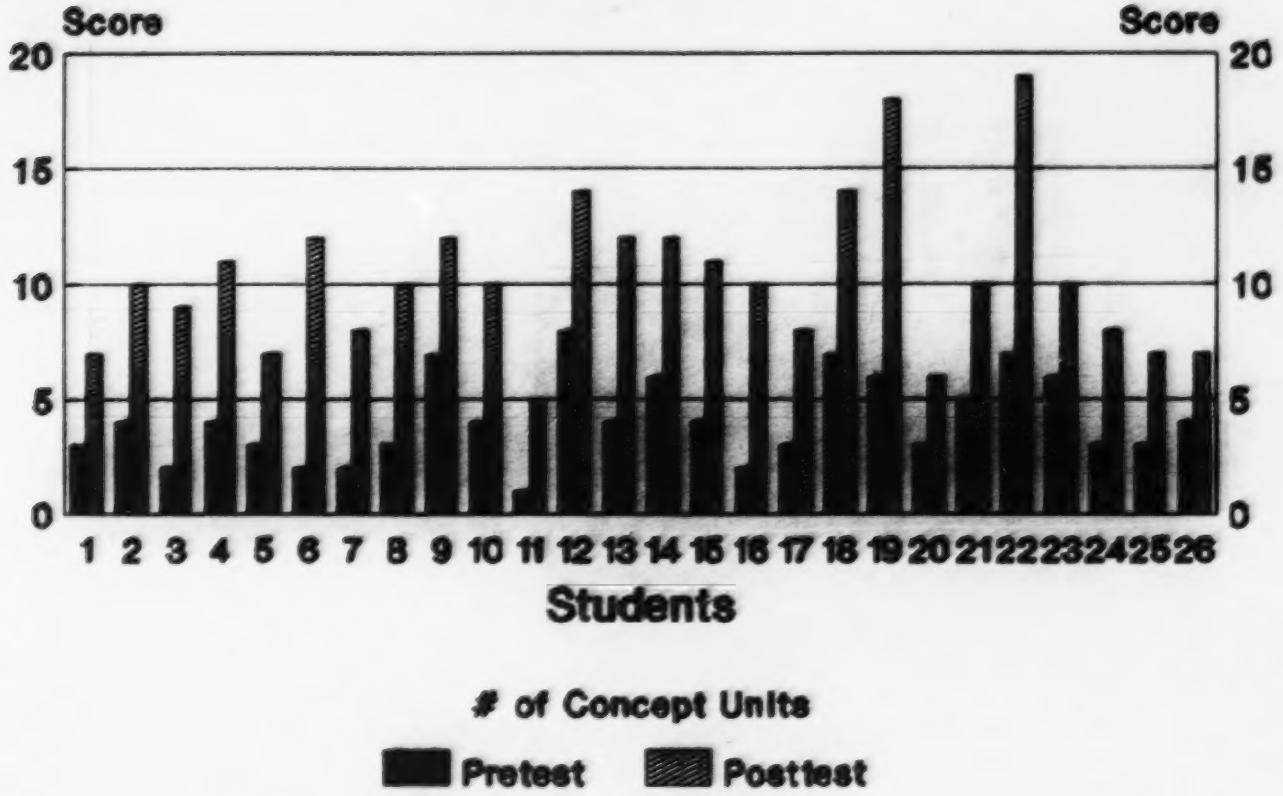
WRITING SCORES
Class 3



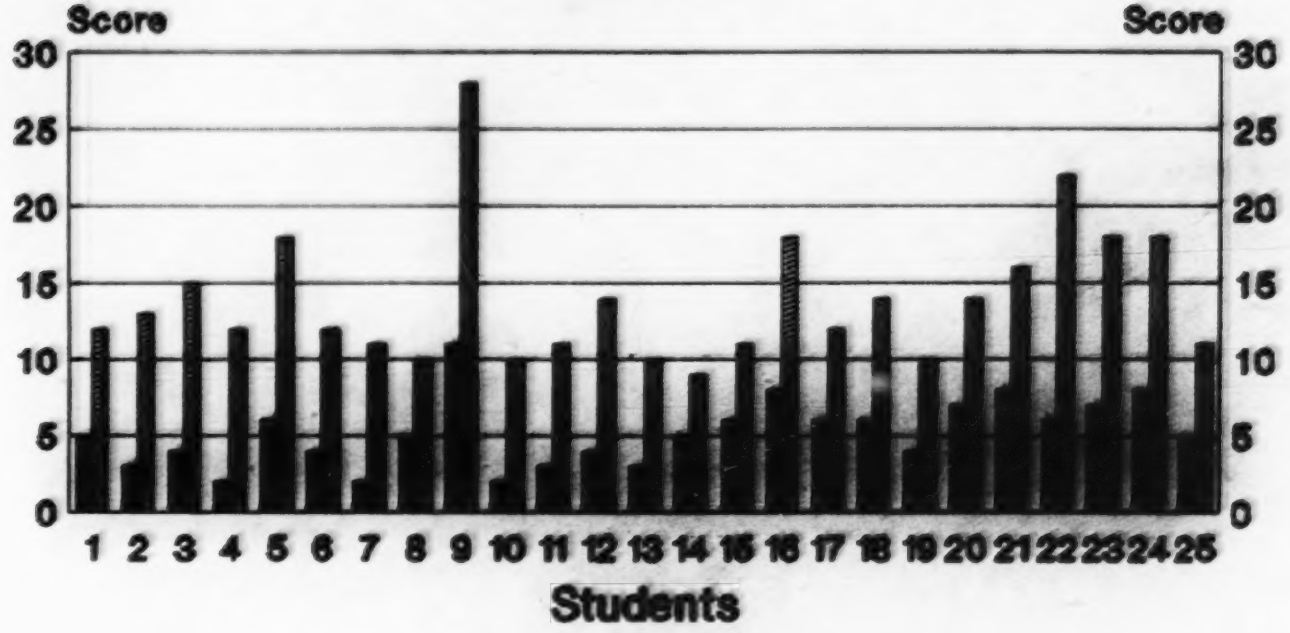
APPENDIX D

Concept Units

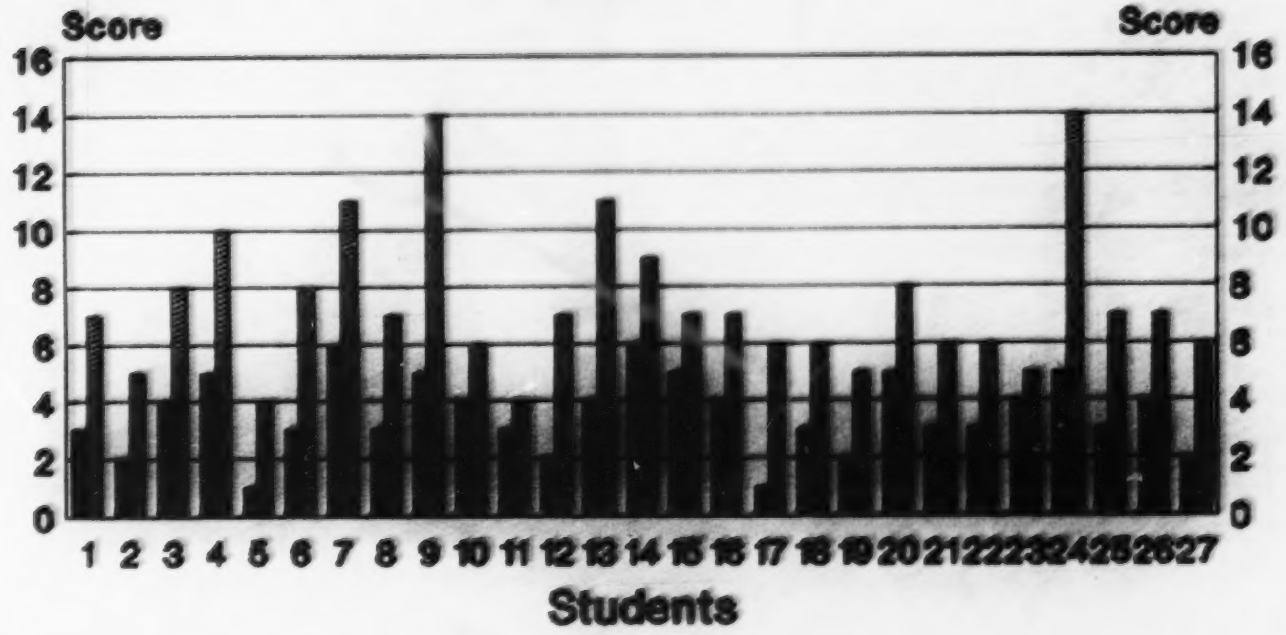
CONCEPT UNITS
Class 1



CONCEPT UNITS
Class 2



CONCEPT UNITS
Class 3



APPENDIX E

Student Final Survey

Appendix E

Student Final Survey

Teacher:_____

1. Have you ever used a computer for a writing assignment?
   YES NO

2. Do you like doing writing assignments on the computer?
   YES NO

3. Would you rather do your writing assignment using pencil and paper?
   YES NO

4. Writing is important.
   YES NO

5. I am a good writer.
   YES NO

6. Does using the computer for a writing assignment make you nervous?
   YES NO

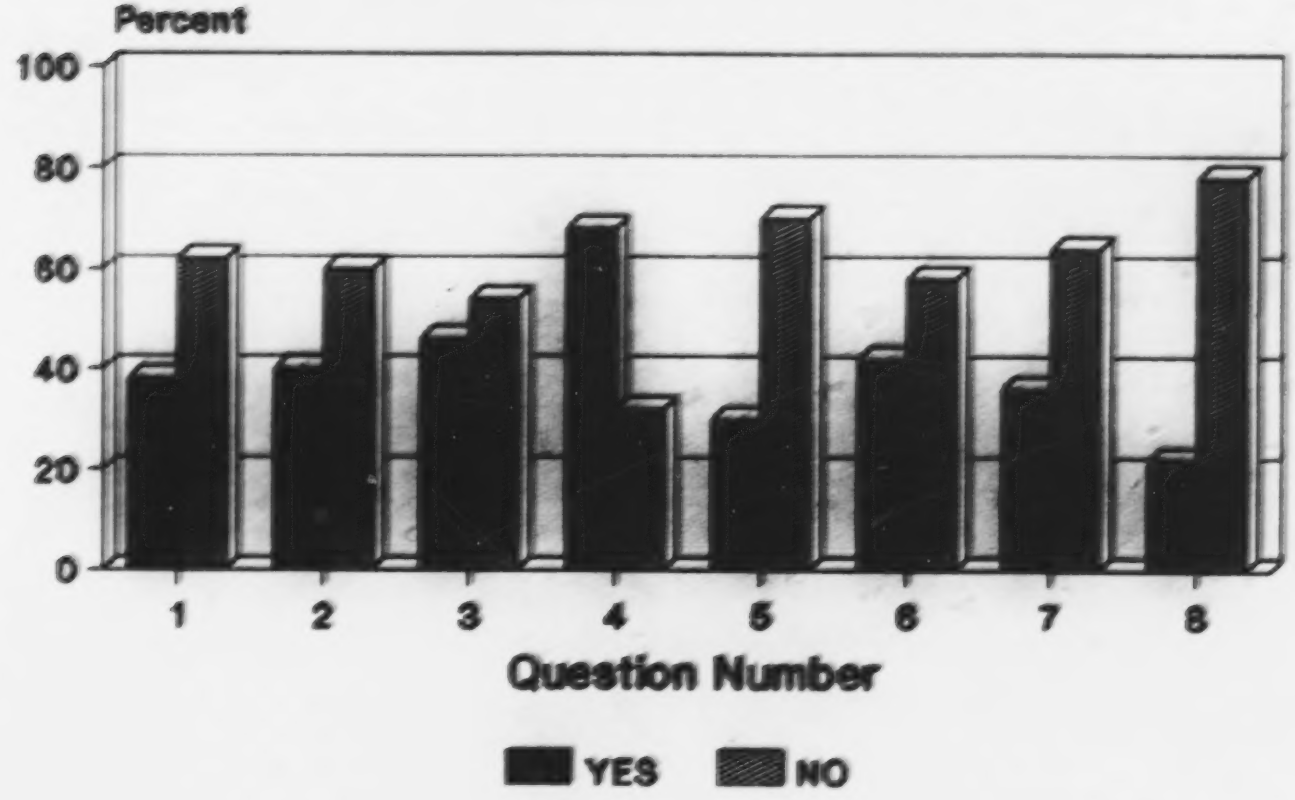
7. It is easier to write using a computer than with a pencil.
   YES NO

8. Writing helps me tell other people what I think.
   YES NO

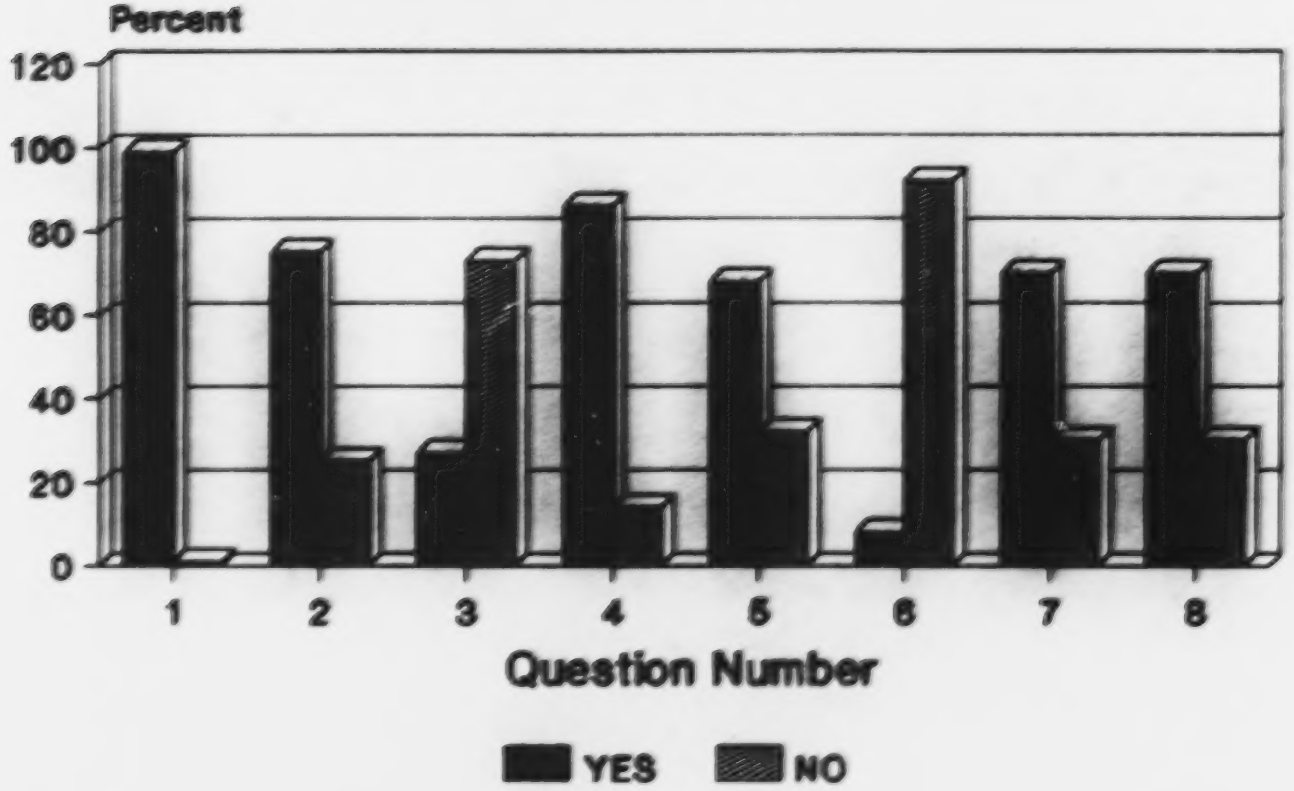
APPENDIX F

Student Survey Results

STUDENT SURVEY
INITIAL SURVEY RESULTS



STUDENT SURVEY
FINAL SURVEY RESULTS



END

U.S. Dept. of Education

Office of Education
Research and
Improvement (OERI)

ERIC

Date Filmed

March 29, 1991